Drought in Nevada


BLM's Mission
To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

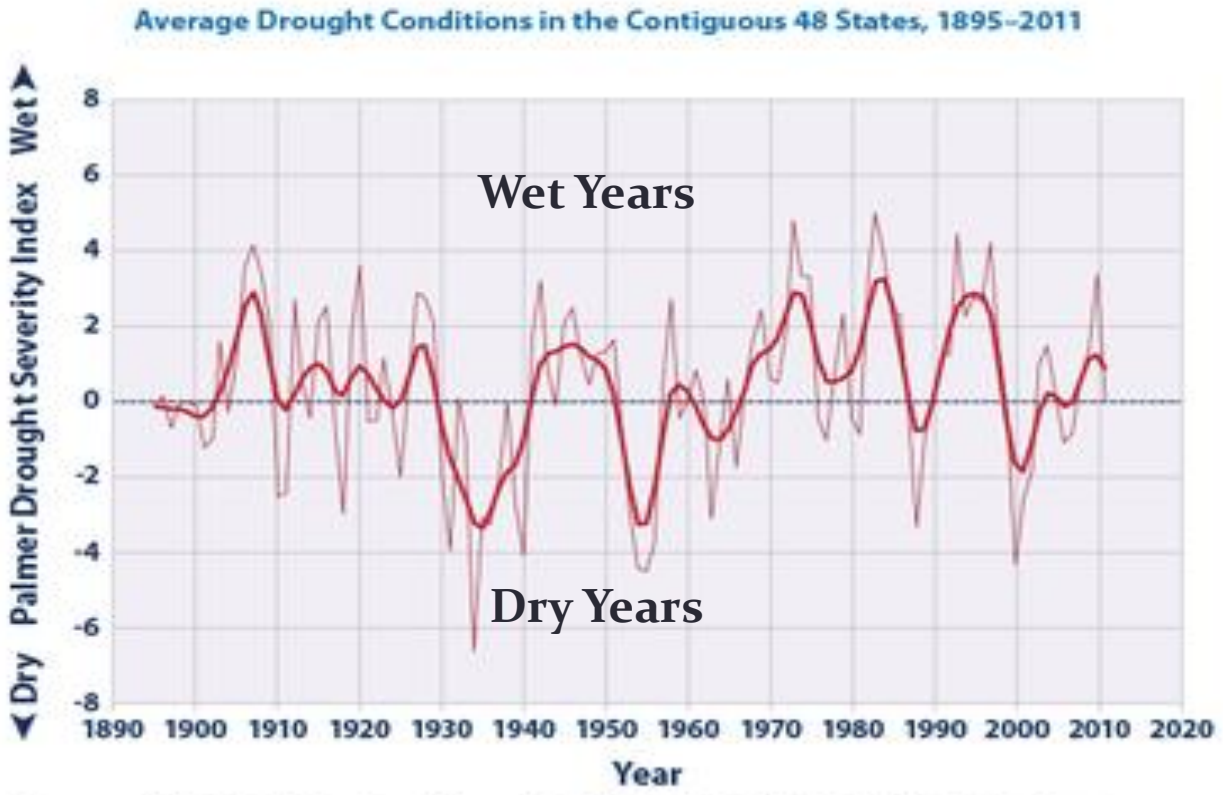
What is Drought?

Drought has been defined by the Society of Range Management as:

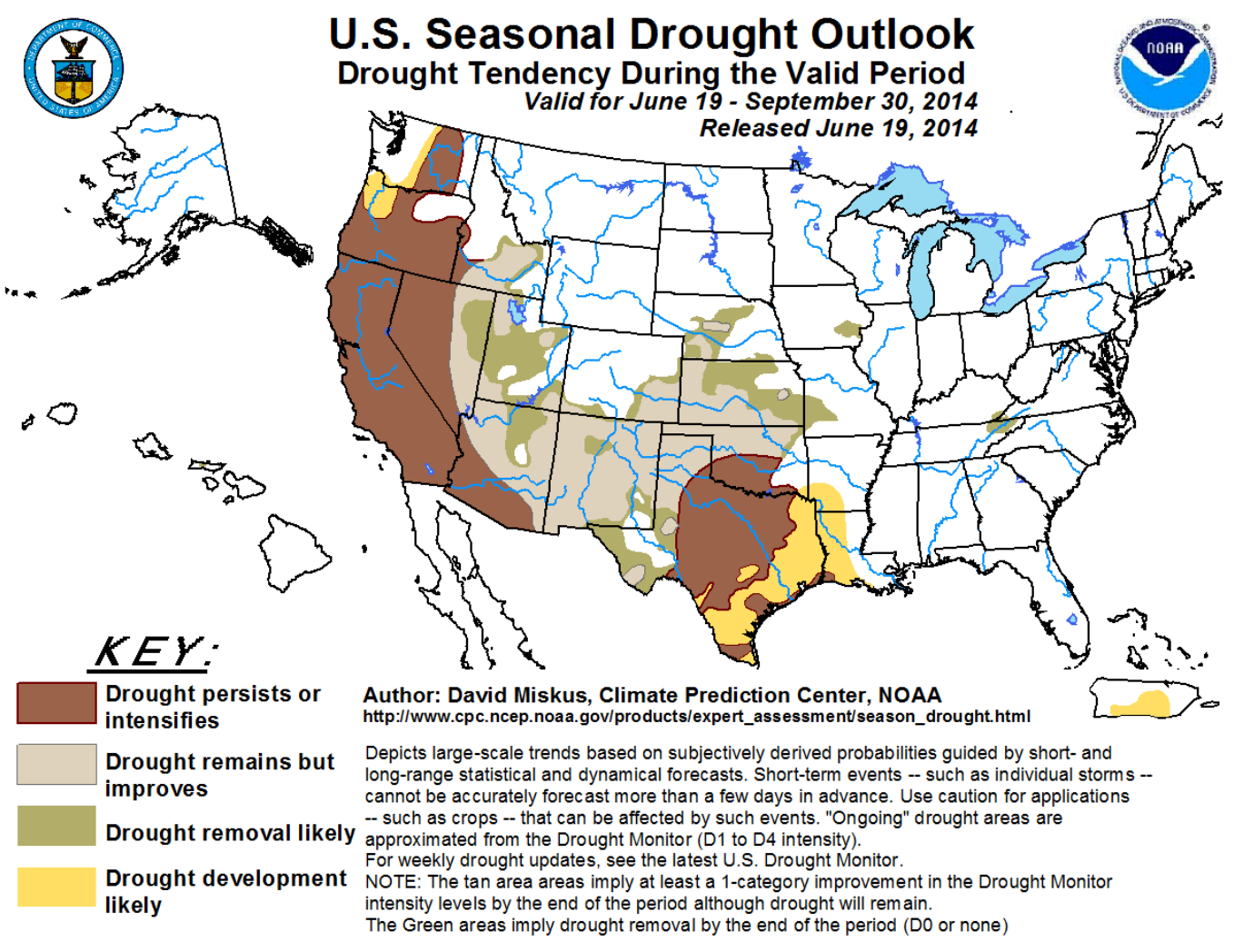
"(1) A prolonged chronic shortage of water, as compared to the norm, often associated with high temperatures and winds during spring, summer, and fall.

(2) A period without precipitation during which the soil water content is reduced to such an extent that plants suffer from lack of water." (Bedell 1998)

Drought is part of the climate cycle and must be included in planning



Drought Prediction



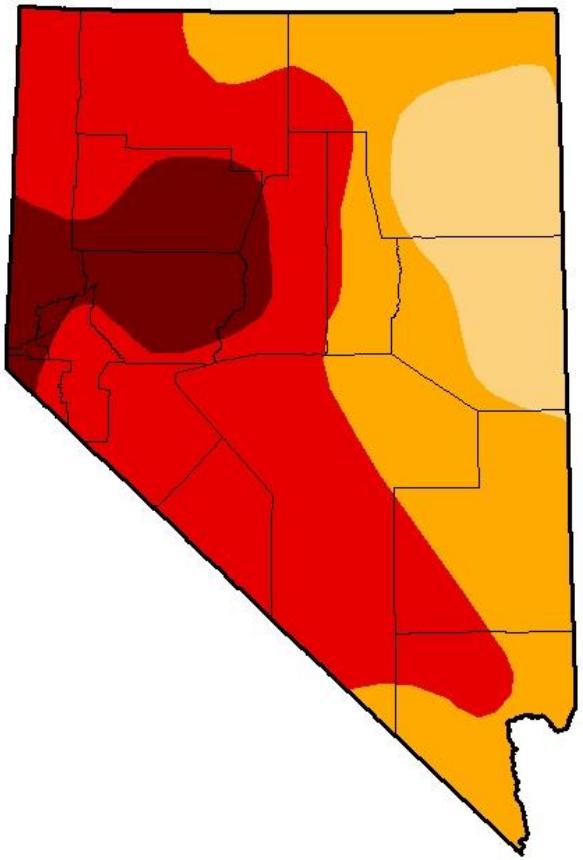
Determining Current Conditions

- U.S. Drought Monitor
- Vegetation Drought Response Index, “VegDRI”
- Western Regional Climate Center
- Great Basin Weather & Climate Dashboard
- Local information and monitoring (field visits)

Drought Monitor

U.S. Drought Monitor

Nevada



August 19, 2014

(Released Thursday, Aug. 21, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	86.92	55.21	11.89
Last Week 8/12/2014	0.00	100.00	100.00	86.92	55.21	11.89
3 Months Ago 5/20/2014	0.00	100.00	100.00	87.03	38.73	8.24
Start of Calendar Year 12/31/2013	0.39	99.61	96.81	77.66	28.55	5.37
Start of Water Year 10/1/2013	0.39	99.61	96.79	79.11	28.55	5.37
One Year Ago 8/20/2013	0.00	100.00	100.00	90.11	42.65	5.37

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

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CPC/NOAA/NWS/NCEP

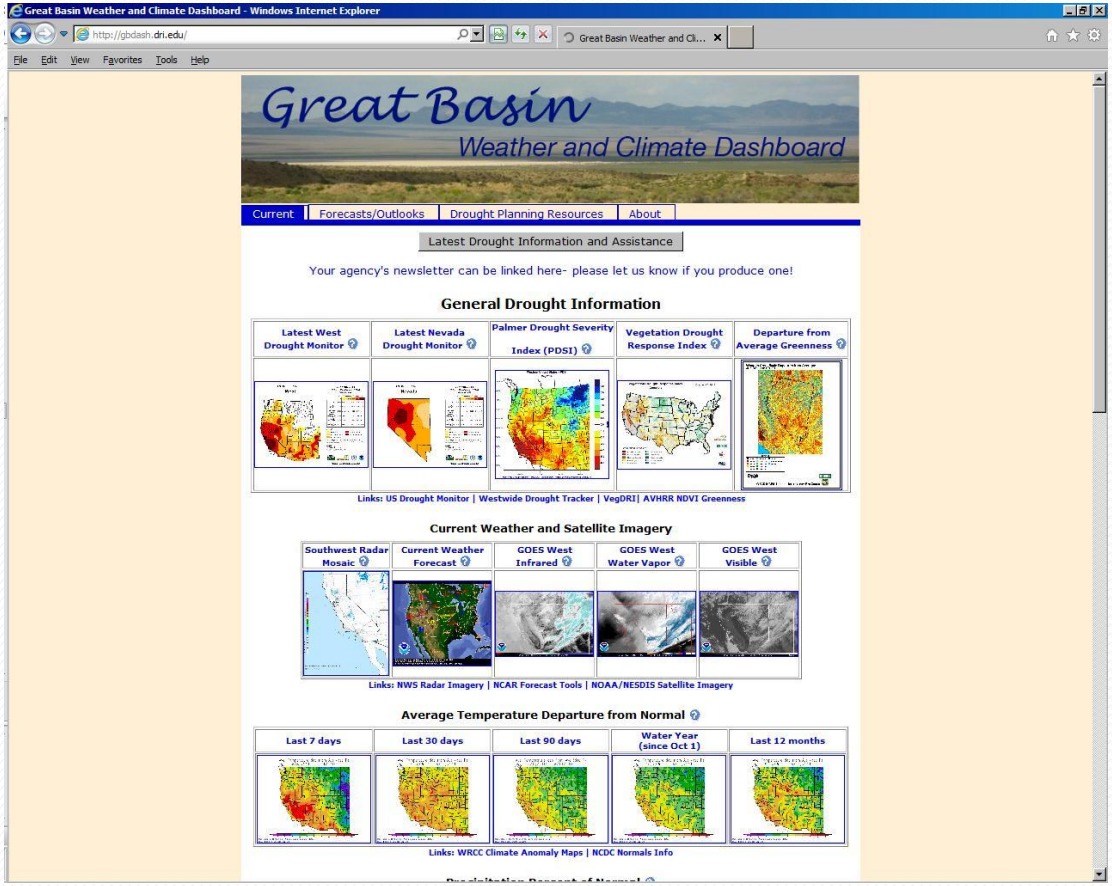
http://droughtmonitor.unl.edu/

U.S. Drought Monitor

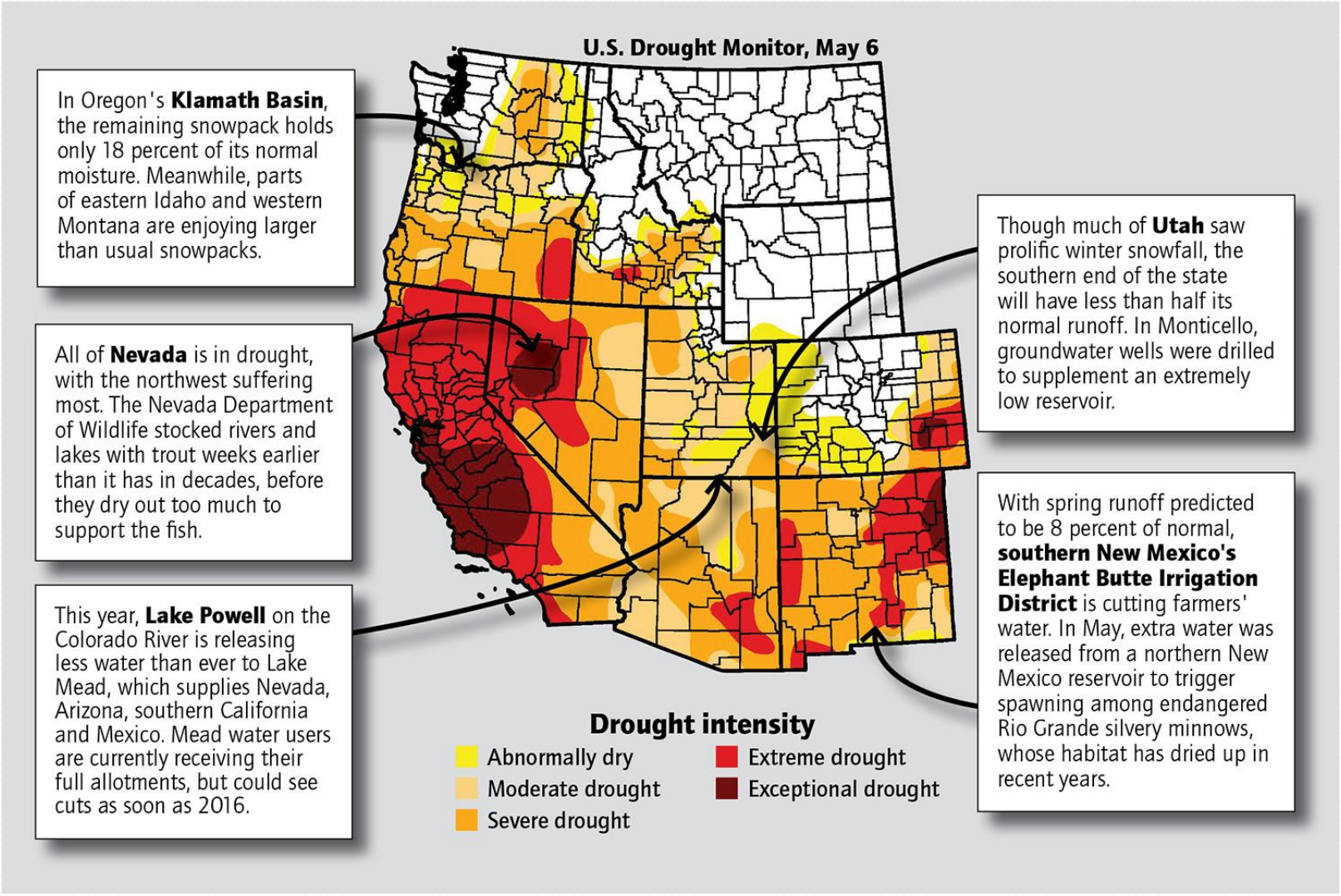
		Ranges					
Category	Description	Possible Impacts	Palmer Drought Index	CPC Soil Moisture Model (Percentiles)	USGS Weekly Streamflow (Percentiles)	Standardized Precipitation Index (SPI)	Objective Short and Long-term Drought Indicator Blends (Percentiles)
D0	Abnormally Dry	Going into drought: short-term dryness slowing planting, growth of crops or pastures. Coming out of drought: some lingering water deficits; pastures or crops not fully recovered	-1.0 to -1.9	21-30	21-30	-0.5 to -0.7	21-30
D1	Moderate Drought	Some damage to crops, pastures; streams, reservoirs, or wells low, some water shortages developing or imminent; voluntary water-use restrictions requested	-2.0 to -2.9	11-20	11-20	-0.8 to -1.2	11-20

Great Basin Weather & Climate Dashboard

- One-stop site for climate and drought data in the Great Basin (www.gbdash.dri.edu)
- Current conditions, forecasts and drought planning resources
- Most of the current conditions data is in graphical format



Drought crosses all boundaries



Drought Affects Plants

- Plants need stored energy to survive winter, and for initial spring growth.
- Plants need more stored energy when summer drought is added.
- Spring growth that is stopped by drought or frost reduces the plant's energy reserves and reduces forage production for next year.

Root Depth Matters

Shrubs usually have deeper root systems, which helps them survive drought

Grasses have shallower root systems

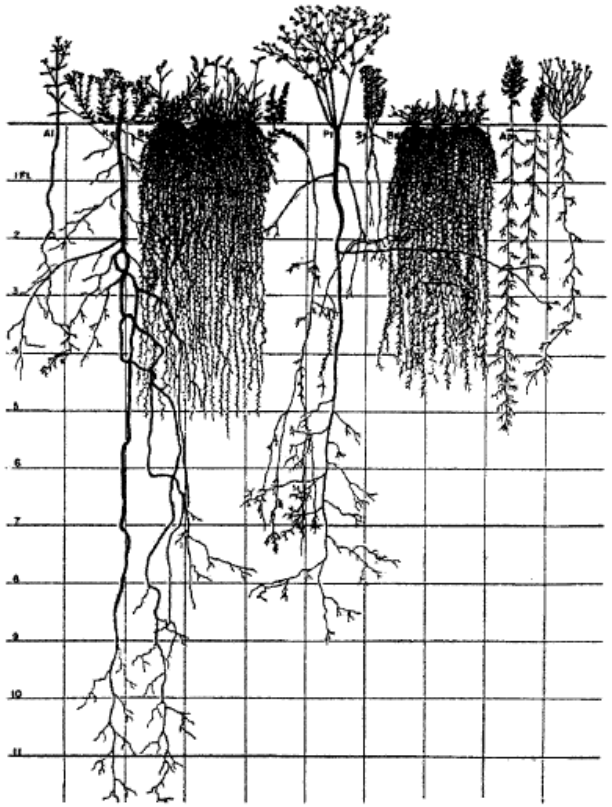


Figure 2. Roots of different grassland plants draw their moisture from different soil layers (Stefferud 1948). Roots of some native plants extend to depths of 20 feet or more. Al, narrow-leafed 4-o'clock (*Allionia linearis*); Kg, prairie false boneset (*Kuhnia gultinosa*); Bg, blue grama (*Bouteloua gracilis*); Mc, globemallow (*Malvastrum coccineum*); Pt, a legume (*Psoralea tenuiflora*); Ss, (*Sideranthus spinulosis*); Bd, buffalo grass (*Buchloe dactyloides*); Ap, western ragweed (*Ambrosia psilostachya*); and Li, skeleton weed (*Lygodesmia juncea*).

Drought Affects Wildlife

With reduced food, water, and cover, wildlife concentrates at water sources, degrading habitats

Drought and Animal Health

Less food means fewer animals breed, disease risk increases, and even fewer will survive the winter

Increased conflicts between wildlife and humans

Grazing and Drought

- Grazing removes plant cover and plant litter, increasing the drying effect and worsening drought conditions.
- Plants in a weakened state may die or not survive winter.

Grazing and Drought

Drought + Overgrazing = Loss of desirable plants and increase in undesirable plants

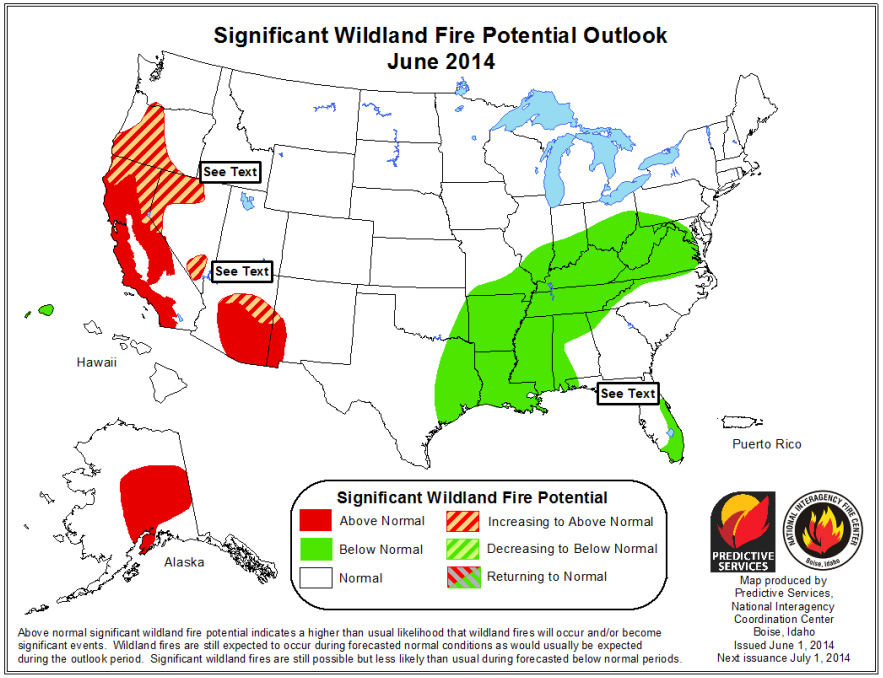
Non-native plants tolerate severe droughts but have poor forage value and dominate open spaces when native plants disappear.

Rangelands & Drought

Long-term Effects:

- All rangelands are affected by drought, regardless of starting condition
- Rangeland in fair or poor condition is more affected and recovers more slowly than rangeland in good or excellent condition
- Grazing of any kind adds to the negative effect of drought
- Plant species composition can shift, resulting in loss of desirable native perennial species
- Future droughts can have more severe effects

Drought: Fire Risk Increases



BLM NV DROUGHT POLICY

- The BLM NV Drought Handbook (2011) requires that we manage for drought before, during, and after drought.
- WO IM-2013-094 – Resource Management During Drought provides direction nation-wide.
- The Nevada District Drought Environmental Assessments were based on the NV Drought Policy.
- NV IM-2014-004 – Grazing Applications for Non-Use During Drought/Voluntary Livestock Grazing Drought Management Agreements

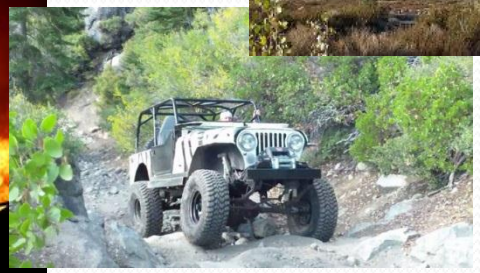
What's Your Priority?









Prioritizing Management During Drought

Highest Priorities are the condition of:

- Horse Management Areas
- Greater sage-grouse habitat
- Riparian Areas
- Native Plant Communities

BLM Drought Management

BLM Nevada has pre-determined:

- Drought Indicators
- Drought Response Triggers
- Drought Response Actions

What are Drought Indicators?

Drought indicators are observations signaling the start or continuation of a drought.

- U.S. Drought Monitor
- Vegetation Drought Response Index, “VegDRI”
- Western Regional Climate Center
- Great Basin Weather & Climate Dashboard
- Local information and monitoring (field visits)

What Are Drought Response Triggers?

Drought Response Triggers (Triggers) are thresholds associated with forage and water resources that indicate the need for site-specific drought response.

- **Water Availability**
  - Presence or absence of water
- **Forage**
  - Utilization and Stubble Height
  - Wild Horse and Burro Body Condition
  - Plant Production and/or Drought Stress

Wild Horses and Burros

Fish Lake Valley

Gold Mountain

Removal (bait, water, or helicopter trapping), temporary water hauls, supplemental feeding in a Horse Management Area, relocation, emergency gathers.

Drought Response Actions

Livestock Actions

- Seek voluntary nonuse
- Partial closure of allotments
- Complete closure of allotments
- Partial reduction in AUMs
- Change in season of use
- Reduced grazing duration
- Change in livestock management practices
- Fencing of critical areas
- Targeted grazing of invasive annual dominated communities
- Changes in kind or class of livestock
- Water hauls and above ground pipelines

Drought Should Be No Surprise

- BLM Nevada plans for drought
- We monitor pre-set indicators
- We have pre-determined triggers
- We have a consistent state-wide approach for management actions

- Our plan is to keep working lands working, for people and for nature, for ever and ever.

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